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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/870,372	05/30/2001	Hiroshi Nemoto	791_146 CIP	8047
25191	7590	04/13/2004	EXAMINER	
BURR & BROWN PO BOX 7068 SYRACUSE, NY 13261-7068			CREPEAU, JONATHAN	
			ART UNIT	PAPER NUMBER
			1746	

DATE MAILED: 04/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/870,372

Applicant(s)

NEMOTO ET AL.

Examiner

Jonathan S. Crepeau

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 February 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-9, 12-17 and 19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-9, 12-17 and 19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. This Office action addresses claims 2-9, 12-17 and 19. Applicants' declarations under 37 CFR §1.132 are sufficient to remove the JP 2000-149886 reference as prior art against all of the instant claims. In addition, Applicant's arguments regarding the Feldhake reference are persuasive and the rejections over this reference are withdrawn. However, new grounds of rejection under 35 USC §103 and the doctrine of obviousness-type double patenting are set forth herein. As these new grounds were not necessitated by amendment, this action is non-final.

Claim Rejections - 35 USC § 103

2. Claims 2-5, 12, 13, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al (U.S. Patent 5,462,820) in view of JP 60-35452 and Dean et al (U.S. Patent 5,171,647), and further in view of Sano et al (U.S. Patent 5,624,771) and Krieger (U.S. Patent 5,900,331).

Regarding claims 2 and 19, Tanaka et al. is directed to a battery comprising a case (2), an internal electrode body (3, 4, 5), an electrolyte (6), first and second terminals (2, 8), and an insulating gasket (1) positioned between the case and the second terminal (see col. 2, lines 29-37; Fig. 1). Regarding claims 3 and 19, the second terminal (8) is an end cap, and the insulator is positioned between the case/first terminal (2) and the end cap. Regarding claims 4 and 12, the case is generally cylindrical. Regarding claims 5 and 13, the case has a first crimped portion to

which the end cap is clamped. Regarding claims 2 and 19, the gasket is made of an ethylene-propylene (E-P) rubber (see abstract).

Tanaka et al. do not expressly teach that the E-P rubber has a surface hardness of from 30 (durometer A) to 60 (durometer D), as recited in claims 2 and 19, or that the volume resistivity of the EP rubber is at least 10^{10} ohm-cm, as recited in claims 2 and 19.

JP 60-35452 is directed to a nonaqueous electrolyte battery comprising a polypropylene sealing material having a Rockwell hardness of at least 95 (see abstract).

The disclosure of JP '452 would motivate the artisan to use a high hardness gasket in the battery of Tanaka because JP '452 teaches, in the abstract, that the purpose of such gasket is "to improve sealing." Therefore, the artisan would be motivated to use a high hardness (i.e., at least Rockwell 95) gasket in the battery of Tanaka.

Further, the patent of Dean is directed to a rechargeable electrochemical cell having a vent septum made of a "high durometer hardness material" (see abstract). The hardness is in the range of 70A-90A (see col. 6, line 14).

Therefore, the artisan would be sufficiently motivated to use a material having a durometer hardness of 70-90A in the modified gasket of Tanaka, because the Dean reference identifies such hardness range as being "high" and the advantages of a high hardness are known from the abstract of JP '452. As such, it would have been obvious to use a durometer hardness of 70-90A in the gasket of Tanaka, which range falls entirely within the claimed range of 30A-60D.

Additionally, Sano et al. is directed to a nonaqueous electrolyte cell. In column 2, line 8, the reference teaches that "[t]he electrolyte cell can be sealed by applying a sealant such as a

plastic gasket having high electrolyte resistance and electrical insulation characteristics between the cover case 1 acting as a positive terminal and the bottom case 5 acting as a negative terminal regardless of the type of cells.”

Therefore, the artisan would be motivated by this disclosure to use a gasket having high electrical insulation characteristics in the battery of Tanaka. Because the gasket of Tanaka is located between the terminals of the battery, the artisan would be motivated to use a gasket having as high an electrical insulation characteristic as possible in order to prevent current from short-circuiting between the terminals through the gasket.

The patent of Kreiger is directed to a thermal battery comprising an “insulating” layer having a volume resistivity in the range of 10^{14} to 10^{17} ohm cm (see abstract).

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the artisan would look to the patent of Kreiger to ascertain a suitable volume resistivity for an electrically insulating material used in a battery. As such, it would have been obvious to use an EP rubber in the gasket of Tanaka having a volume resistivity in the range of 10^{14} to 10^{17} ohm cm.

3. Claims 2-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 771040 (Kita et al.) in view of Tanaka, JP 60-35452, Dean et al., Sano et al., and Krieger.

Regarding claim 2, Kita et al. teach a battery comprising a case (17), an internal electrode body, an electrolyte, first and second terminals (21, 20), and insulating gaskets (50) positioned between the case and each terminal (see Figs. 17 and 18; col. 17, lines 14-33). The gasket is

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made of polypropylene (see col. 11, line 12). Regarding claims 3, 6, and 9, first and second end caps (1) are positioned at opposite ends of the case, and each insulator is positioned between each terminal and its respective end cap. Regarding claims 4 and 7, the case is generally cylindrical. Regarding claims 5 and 8, the case has a first crimped portion to which the end cap is clamped.

Kita et al. do not expressly teach that the insulators comprise an ethylene-propylene rubber having surface hardness of from 30 (durometer A) to 60 (durometer D), as recited in claim 2, or that the volume resistivity of the EP rubber is at least 10^{10} ohm-cm, as recited in claim 2.

As noted above, Tanaka is directed to batteries comprising gaskets made of ethylene-propylene rubber.

The artisan would be motivated by the disclosure of Tanaka to use an ethylene-propylene rubber in the gaskets of Kita et al. because in column 2, line 6, Tanaka teaches that this material “permits not only the improvement in the shelf stability during storage while [the battery] is not in use, but also the reduction of the degree of deterioration during use (during charging, discharging at a high current or pulse-discharging in an atmosphere whose temperature varies).” Accordingly, the artisan would be motivated to use an ethylene-propylene rubber material in the gaskets of Kita et al.

The JP 60-35452, Dean et al., Sano et al., and Krieger references are applied for the reasons set forth in the preceding rejection.

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because as set forth above, these references would lead

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a person skilled in the art to use an EP rubber in the gasket of Tanaka (and thus Kita et al.) having a durometer hardness of 70-90A and a volume resistivity of 10^{14} to 10^{17} ohm cm. As such, the claimed subject matter would be rendered obvious.

4. Claims 2-8, 12-17, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Teramoto (U.S. Patent 5,571,632) in view of Tanaka, JP 60-35452, Dean et al., Sano et al., and Krieger.

Regarding claims 2 and 19, Teramoto teaches a battery comprising a case, an internal electrode body (13), an electrolyte, first and second terminals (12a, 11a), and an insulating gasket is (14) positioned between the case and the first terminal (see Fig. 5; col. 7, line 66). The gasket is made of polypropylene (see col. 10, line 45). Regarding claims 3, 6, 14, and 19, first and second end caps (15a) are positioned at opposite ends of the case, and the insulator is positioned between the case/first terminal (12a) and each end cap. Regarding claims 4, 7, 12, and 15, the case is generally cylindrical. Regarding claims 5, 8, 13, and 17, the case has first and second crimped portions to which the end cap is clamped.

Teramoto does not expressly teach that the insulators comprise an ethylene-propylene rubber having surface hardness of from 30 (durometer A) to 60 (durometer D), as recited in claims 2, 16, and 19, or that the volume resistivity of the EP rubber is at least 10^{10} ohm-cm, as recited in claims 2 and 19.

As noted above, Tanaka is directed to batteries comprising gaskets made of ethylene-propylene rubber.

The artisan would be motivated by the disclosure of Tanaka to use an ethylene-propylene rubber in the gaskets of Teramoto because in column 2, line 6, Tanaka teaches that this material "permits not only the improvement in the shelf stability during storage while [the battery] is not in use, but also the reduction of the degree of deterioration during use (during charging, discharging at a high current or pulse-discharging in an atmosphere whose temperature varies)." Accordingly, the artisan would be motivated to use an ethylene-propylene rubber material in the gaskets of Teramoto.

The JP 60-35452, Dean et al., Sano et al., and Krieger references are applied for the reasons set forth above.

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because as set forth above, these references would lead a person skilled in the art to use an EP rubber in the gasket of Tanaka (and thus Teramoto) having a durometer hardness of 70-90A and a volume resistivity of 10^{14} to 10^{17} ohm cm. As such, the claimed subject matter would be rendered obvious.

Double Patenting

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686

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F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 2-5, 12, 13, and 19 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-12 of U.S. Patent No. 6,139,986 (Kurokawa et al) in view of JP 60-35452, Dean et al., Sano et al., and Krieger. The '986 patent claims do not expressly teach that the E-P rubber has a surface hardness of from 30 (durometer A) to 60 (durometer D) or that the volume resistivity of the EP rubber is at least 10^{10} ohm-cm, as recited in claims 2 and 19. However, the JP 60-35452, Dean et al., Sano et al., and Krieger references would lead a person skilled in the art to use an EP rubber in the gasket of the '986 patent claims having a durometer hardness of 70-90A and a volume resistivity of 10^{14} to 10^{17} ohm cm. As such, the instant claims are an obvious variation of the '986 patent claims.

7. Claims 2-9, 12-17, and 19 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-53 of copending Application No. 09/863,108 (U.S. Pre-Grant Publication No. 2001/0049054) in view of JP 60-35452 and Dean et al. The '108 application claims do not expressly teach that the E-P rubber

has a surface hardness of from 30 (durometer A) to 60 (durometer D). However, the JP 60-35452 and Dean et al. references would lead a person skilled in the art to use an EP rubber in the gasket of the '108 claims having a durometer hardness of 70-90A. Therefore, the instant claims define an obvious variation of the '108 claims.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

8. Claims 2-5, 12-17, and 19 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-27 of copending Application No. 09/937,943 (U.S. Pre-Grant Publication No. 2003/0035993) in view of JP 60-35452, Dean et al., Sano et al., and Krieger. The '943 claims do not expressly teach that the E-P rubber has a surface hardness of from 30 (durometer A) to 60 (durometer D) or that the volume resistivity of the EP rubber is at least 10^{10} ohm-cm, as recited in claims 2 and 19. However, the JP 60-35452, Dean et al., Sano et al., and Krieger references would lead a person skilled in the art to use an EP rubber in the gasket of the '943 claims having a durometer hardness of 70-90A and a volume resistivity of 10^{14} to 10^{17} ohm cm. Therefore, the instant claims define an obvious variation of the '943 claims.


This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Crepeau whose telephone number is (571) 272-1299. The examiner can normally be reached Monday-Friday from 9:30 AM - 6:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski, can be reached at (571) 272-1302. The phone number for the organization where this application or proceeding is assigned is (571) 272-1700. Documents may be faxed to the central fax server at (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jonathan Crepeau
Patent Examiner
Art Unit 1746
April 9, 2004